David Ware

Owens Corning

Measure Information Template

California Building Energy Efficiency Standards
Revisions for July 2003 Adoption

NAIMA Proposed Measure:

Revise mandatory minimum duct insulation to R8 for low-rise residential occupancies

November 5, 2001

Description

Section 150 (m) of the current Standards sets the minimum duct insulation requirement for residential low-rise buildings at R4.2 for ducts in unconditioned space. Our proposal would raise the value from R4.2 to R8.

Benefits

R8 duct insulation is the minimum requirement for new residential construction in the neighboring states of Washington and Oregon. The current California mandatory minimum of R4.2 is below the level required by the IECC and IRC for climates above 2000 heating degree days. Even the state of Florida mandates at least R6 duct insulation in attics and R8 on the building exterior.

Preliminary Micropas runs for all 16 climate zones demonstrate significant cooling and heating energy savings for homes with R8 rather than the current minimum R4.2 duct insulation. Cooling savings are approximately 1.8% - 4.5 % (except for Climate Zone 1 which has no cooling load) and heating savings (assumed to be gas) are from 3.1% - 5.4%

Environmental Impact

The proposed measure has no potential adverse environmental impacts. The products used to meet the new minimum level are already in use and widely accepted.

Type of Change

The proposed change modifies the current mandatory measure for low rise Residential duct insulation and does not modify or expand the scope of the Standards.

The proposed modification revises Section 124 of the Standards by including a new table of duct R-values. Reference to CMC sections regarding duct insulation will be deleted. The proposed revised table is as follows:

"CEC 2004 Update-duct table.do

Measure Availability and Cost

This measure will require no new products or technologies. Designers may be required to allocate slightly larger openings for duct clearance. The products necessary to meet the proposed R8 duct insulation requirement are currently available from multiple duct suppliers to installers in ample quantity.

Useful Life, Persistence and Maintenance

A strong argument for approval of this measure is that insulation has a proven long useful life, great persistence, and absence of maintenance requirements. Installation of superior duct insulation at time of initial construction is relatively inexpensive. To add duct insulation at a later date is often difficult or impossible and much more costly.

Performance Verification

No new tools or methods are required to ensure or verify performance of the proposed measure.

Cost Effectiveness

The proposed measure has not recently been evaluated for cost-effectiveness.

Analysis Tools

No new tools are required to quantify energy savings and peak electricity demand reductions – the current reference method is adequate. The applicant will submit data on estimated savings and demand reductions.

Relationship to Other Measures

The proposed measure will have no impact on other mandatory measures or on current prescriptive packages.

Bibliography and Other Research

1. Energy code requirements for the states of Oregon, Washington, and Florida.
2. Research reports available from LBNL and a research paper (Modera, Luca, Treidler 1997) that was used to help support the current R8 duct insulation value in the IECC.